Date: Tue, 21 Jun 94 04:30:35 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #169
To: Ham-Homebrew

Ham-Homebrew Digest Tue, 21 Jun 94 Volume 94 : Issue 169

Today's Topics:

Cavities
cheap cases wanted (2 msgs)
L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ
Square transmission lines (3 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

Date: 21 Jun 1994 09:07:18 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!math.ohio-state.edu!jussieu.fr!
univ-lyon1.fr!elendir@network.ucsd.edu
Subject: Cavities
To: ham-homebrew@ucsd.edu

Hello !

Does someone have any interesting pointers towards the theory (and
practice) of resonating cavities ? I know some facts (frequency,
...) but I am interesting in knowing how to compute Q (Volume/Surface ?)
and the formulae for cylindrical cavities.

Thanks !

Vince, F1RCS.

PS : This is for a repeater project.

Date: Mon, 20 Jun 1994 13:57:09 GMT
From: ihnp4.ucsd.edu!usc!sol.ctr.columbia.edu!news.ess.harris.com!
adm01.rfc.comm.harris.com!gdian22@network.ucsd.edu
Subject: cheap cases wanted
To: ham-homebrew@ucsd.edu

Forunately for me, there are a couple surplus electronics parts stores
here in the rochester ny area, so cheap project boxes are available.

I have used printed circuit board material to make enclosures too.
The Doug DeMaw (w1fb) qrp books describe this method. I use my table
saw to cut the board to size, then solder the box together. A lot
of my projects use plexiglass for a top, so you can see all the goodies
inside. Yes, in some cases hand capacitance can play into operation
of the radio, so be careful about using a plastic lid. Anyway, I
pay 2 cents per square inch of single sided board, so the enclosure
price is low. I also have a small aluminum break (sp?) on order
from harbor freight (left coast import tool company), so I can get sheet
aluminum and form cases that way (i.e. nice 90 degree angles, smooth
bends).

73, gary n2jgu

Date: 20 Jun 1994 23:07:03 -0400
From: newstf01.cr1.aol.com!search01.news.aol.com!not-for-mail@uunet.uu.net
Subject: cheap cases wanted
To: ham-homebrew@ucsd.edu

In article <2u5i3j$a1h@crl.crl.com>, frbspd@crl.com (Stephen Dunifer)
writes:

all that good stuff...

I've found with the pc board cases that really thick pc board works
better, especially for places where there are plug-ins (power leads,
antennas, etc). Fortunately there is a relatively cheap source of the
thick stuff locally-->1/8th inch thick, 5 square feet for $5.

I once found an extruded aluminum 3X5 card file box (mil surplus, of
course) that is about 1/8th inch thick and a *fantastic* radio box!!!

Good luck!!

72 (+/- 1) Jim N0OCT

Date: 20 Jun 1994 21:54:19 GMT
From: ihnp4.ucsd.edu!sdd.hp.com!hpscit.sc.hp.com!rkarlqu@network.ucsd.edu
Subject: L.O FOR 1.2, 1.3, 1.4, 1.5 GHZ
To: ham-homebrew@ucsd.edu

In article <CroIo3.DG6@rahul.net>, Mike Lyon <mlyon@rahul.net> wrote:
>well i am trying to design a L.O for 1.2, 1.3, 1.4, 1.5 ghz. i don't
>think i can do it with crystals (but if anyone thinks i can i would love
>to hear from you on how i could do it :). so my idea was to build the
>oscilator with the good old caps and inductors (feedback type). the thing
>is though is the fact that i can't find any formulas and schematics on
>how to build one. i have a schematic for a 2 ghz L.O but it doesn't have
>any formulas to figure out the components values. so my question is for
>you experts is do you guys or gals have any schematics,formulas or
>anything of that nature you could either post or e-mail to me? any light
>on this subject would be greatly appreciated.
>
>   thanx alot,
>   mlyon@rahul.net
>--
>Mike Lyon <mlyon@rahul.net>

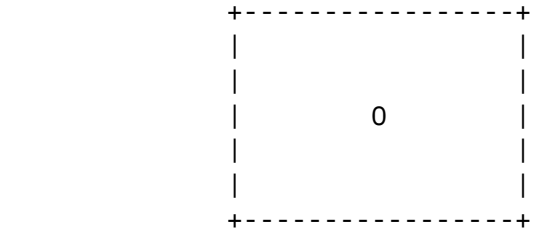
Build a 2 GHz. grounded emitter amplifier using a transistor with an
Ft of 5 GHz. or so. (MRF951 will work fine) Now connect the
cathode of a Toshiba 1SV186 tuning diode (available from Matcom,
Palo Alto, CA) to the collector, which should be connected to
VCC with an RF choke. The anode of the tuning diode is coupled
via a 100 pF. capacitor to the base. This junction also has a 1 K resistor
to feed in the tuning voltage, which is relative to VCC. The leads of the
diode are the tuning inductance; adjust lead length to get the
right frequency range. You should be able to get about an octave.
Be sure to use at least 5 DC volts across the emitter bias resistor
(which of course is RF bypassed) to assure stable bias across the tuning
range. Put a 50 ohm load impedance on the collector and no load on
the base.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

Date: Mon, 20 Jun 94 20:22:48 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!uhog.mit.edu!
news.kei.com!ub!galileo.cc.rochester.edu!news@network.ucsd.edu

Subject: Square transmission lines
To: ham-homebrew@ucsd.edu

Could someone clue me in to the formula for calculating the characteristic impedance of a coaxial transmission line with a square shield, ie the cross section looks like...



That's a round center conductor there (ie brass tubing). Possible uses for such a bird would be 1) a directional coupler made out of scrap PC board and a piece of wire or tubing or 2) a tapered-line matching section if one tapers the width of the shield...

-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.

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"Experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient . . . the greatest dangers to liberty lurk in insidious encroachment by men of zeal, well meaning but without understanding."

Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928

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Date: Mon, 20 Jun 1994 21:37:24 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!spool.mu.edu!sdd.hp.com!hp-pcd!hpcvsnz!tomb@network.ucsd.edu
Subject: Square transmission lines
To: ham-homebrew@ucsd.edu

Bill VanRemmen (BILLY@urhep.pas.rochester.edu) wrote:
: Could someone clue me in to the formula for calculating the characteristic
: impedance of a coaxial transmission line with a square shield, ie the cross

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Date: Mon, 20 Jun 94 22:50:15 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!gatech!newsxfer.itd.umich.edu!
zip.eecs.umich.edu!yeshua.marcam.com!news.kei.com!ub!galileo.cc.rochester.edu!
news@network.ucsd.edu
Subject: Square transmission lines
To: ham-homebrew@ucsd.edu

In <CrptED.HEp@hpcvsnz.cv.hp.com> tomb@lsid.hp.com writes:

> Bill VanRemmen (BILLY@urhep.pas.rochester.edu) wrote:
> : Could someone clue me in to the formula for calculating the characteristic
> : impedance of a coaxial transmission line with a square shield, ie the cross
>
> From "Reference Data for Engineers," seventh edition, Howard Sams, given
> that D is the box inside side length and d is the inner conductor diameter,
>
> Zo approx= [138*log(rho)+6.48-2.34*A-0.48*B-0.12*C]/(epsilon)^0.5
>
> where epsilon is the relative dielectric constant,
>
> rho = D/d
>
> A = (1+0.405*rho^-4)/(1-0.405*rho^-4)
>
> B = (1+0.163*rho^-8)/(1-0.163*rho^-8)
>
> C = (1+0.067*rho^-12)/(1-0.067*rho^-12)
>
> ---------------------------
> Well, you asked for it...
>
> There are also formuale for a single wire in a trough, and a single wire
> centered between two parallel ground planes.

Thanks Muchly!
73
-Bill VanRemmen, KA2WFJ
billy@urhep.pas.rochester.edu
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.

Justice Louis Brandeis
Olmstead vs. United States, United States Supreme Court, 1928
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Date: (null)
From: (null)
Zo approx= [138*log(rho)+6.48-2.34*A-0.48*B-0.12*C]/(epsilon)^0.5

where epsilon is the relative dielectric constant,

rho = D/d

A = (1+0.405*rho^-4)/(1-0.405*rho^-4)

B = (1+0.163*rho^-8)/(1-0.163*rho^-8)

C = (1+0.067*rho^-12)/(1-0.067*rho^-12)

Well, you asked for it...

There are also formuale for a single wire in a trough, and a single wire
centered between two parallel ground planes.

Date: 20 Jun 1994 19:08:51 -0700
From: nntp.crl.com!crl.crl.com!not-for-mail@decwrl.dec.com
To: ham-homebrew@ucsd.edu

References <DEAN.94Jun19130911@splinter.coe.neu.edu>,
<1994Jun19.203004.25778@bongo.tele.com>, <Crp83B.83E@news.ess.harris.com>
Subject : Re: cheap cases wanted

Several places have a series of aluminum and steel cases available for
under $10 plus lots of other goodies.

Marlin P Jones $ Assoc. (407) 848-8236 - POB 12685, Lake Park, FL 33403

Stock #	Size	Price
5804-BX	9.5 x 5.0 x 1.5	$4.00
5805-BX	9.0 x 7.0 x 2.0	$4.40
5806-BX	12.0 x 8.0 x 3.0	$5.00

the above are 18ga steel, cadmium plated

Hosfelt Electronics (800) 524-6464 - 2700 Sunset Blvd., Stubenville, OH 43952

14-126	4 x 6 x 2	$3.70
14-127	7 x 7 x 2	$4.35

the above are aluminum

Also try Mouser Electronics and Digi-Key

Stephen Dunifer

Date: Tue, 21 Jun 1994 00:48:30 GMT
From: rit!isc-newsserver!ultb!jdc3538@cs.rochester.edu
To: ham-homebrew@ucsd.edu

References <2tqkg9$f8l@quartz.ucs.ualberta.ca>, <2trc2m$pk5@crl.crl.com>, <korsCrMBK8.MtL@netcom.com>fer.it
Subject : Re: ATV transmitter plans?

In article <korsCrMBK8.MtL@netcom.com> kors@netcom.com (Richard Kors) writes:
>Stephen Dunifer (frbspd@crl.com) wrote:
>: Reddy Praveen (reddy@ee.ualberta.ca) wrote:
>: : does any one know where i can by an inexpensive atv transmitter or where
>: : i can get the plans for one
>: : I would like something small and self contained that has a NTSC input
>: : and an antenna output
>: : thanks
>
>: Check out the latest issue of Electronics Now (July 1994), full diagrams
>: and all.
>
>
>The Rabbit cost $29.95 for a transmitter and receiver at 900 mc . What more could a Ham want?
>
>The Electronics Now kit is very touchy and a challange to build. Mine works,
>but I'd never do it again.
>
>dick kors
>kors@netcom.com
>km6ep

>

A sub-mini camera at the same price. And a 440 mhz version of the rabbit for use with our local ATV repeater. And a bunch of people interested in ATV. From what I've heard, there are very few ATV enthusiasts.

73...Jim N2VNO

End of Ham-Homebrew Digest V94 #169
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